

## ABSTRACT

A laser difference frequency discriminator that detects the difference between two laser frequencies and outputs a voltage near baseband that is related to the difference frequency. This discriminator power splits a laser beam containing the two laser frequencies into two paths, one which is sent down a delay line to a photo detector while the other is sent directly to a photodiode; there may be an optional phase shifter in either path. The relative phases of the heterodyne signals from the photo detectors are compared in a phase detector; its output voltage is related to the phase difference, which is, in turn, related to the difference frequency. This discriminator has applications in microwave generation, laser radar, and optical communications.